



公司名称：牧德科技（北京）有限公司

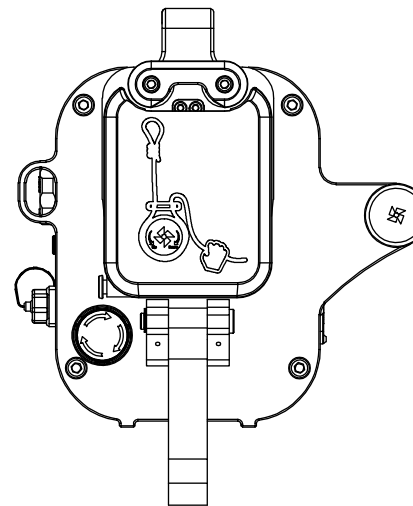
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小蜘蛛使用手册

MODE SMART SPIDER PRO ASCENDER INSTRUCTION MANUAL

ORIGINAL VERSION

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使用产品之前，所有者和操作人员必须阅读理解本说明手册。

Owners and operators must read and understand this instruction manual before using the product.

01 免责声明 Disclaimer

- ◆ 小蜘蛛电动升降器并非安全设备。电动升降器是一种专门设计的工具，用于协助人员工作，主要特点是体积小，方便携带。
- ◆ 牧德科技不保证小蜘蛛电动升降器能够提高用户的个人安全或是让用户免于严重伤害或死亡，也不保证小蜘蛛电动升降器能起到救生设备的作用。
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- ◆ 产品出现任何问题，请及时联系销售人员或致电，禁止私自拆卸，如违反出现的损失我司概不承担。
- ◆ 上述信息请购买方和使用人员认真阅读。

- ◆ The Little Spider Electric Elevator is not a safety device. An electric hoist is a specially designed tool used to assist personnel in their work, characterized by its small size and easy portability.
- ◆ Mode China doesn't guarantee that Smart Spider Power Ascender can improve users' personal safety or prevent users from serious injury or death, nor does it guarantee that the Smart Spider Power Ascender can play the role of life-saving equipment.
- ◆ Mode China doesn't assume any responsibility or obligation for the damage, injury or death caused by using or misusing the Smart Spider Power Ascender.
- ◆ Personnel who don't have High altitude Practitioner Certificate and/or training for the use of the Smart Spider Power Ascender are not allowed to operate the Smart Spider Power Ascender. It is suggested that the operator should have the qualification of rope access technology and/or lifting technology, depending on the applications of the equipment. However, despite this requirement, Mode China still can't control the use of this equipment. The user of this equipment shall bear the risk of any damage, injury or death caused by such use. The buyer of the Smart Spider-Power Ascender and any users clearly understand and agree that they shall not think or ask Mode China and/or the buyer to bear any obligation or responsibility for any damage, injury or death caused by the use of the Smart Spider Power Ascender. Moreover, Mode China has not made any explicit or implied warranties beyond those expressed herein according to law or otherwise.
- ◆ Mode Technology shall not be liable for any harm or loss caused by unauthorized modification of products for other purposes.
- ◆ If there are any problems with the product, please contact the sales personnel or call them in a timely manner. Unauthorized disassembly is prohibited, and our company will not be responsible for any losses caused by violations.
- ◆ The above information should be carefully read by both the buyer and the user.

02 产品安全 Product safety

若发生以下任一情形，不得使用小蜘蛛：用于任何设计用途之外的用途。

- ◆ 易爆环境中。
- ◆ 经过除牧德科技之外任何人的改装。
- ◆ 在从高于 1m 的高度自由坠落到硬质表面之后。
- ◆ 如果承受过动态负载-此设备设计仅供用于静态系统。
- ◆ 如果发生了任何方式的误用，因为零件或部件可能已经损坏。
- ◆ 使用除原装电池充电器之外的任何充电器。
- ◆ 与损坏或改装过的电池充电器一同使用。使用非牧德科技制造的任何电池
- ◆ 仅可使用牧德科技建议的原装备件或物料。
其他电池充电器可能会损坏电池，产生有毒气体，在最坏情况下甚至会引起爆炸。小蜘蛛及其设备在每次使用之前和之后都必须进行检查，并且每年至少进行一次检查（国家法规可能要求进行更频繁的检查）

In any of the following cases, Smart Spider Power Ascender should not be used, for any purpose other than the designed purpose.

- ◆ In an explosive environment.
- ◆ After anyone's modification except Mode China.
- ◆ After falling freely from a height higher than 1 meter to a hard surface.
- ◆ If subjected to dynamic load-this equipment is designed for static systems only.
- ◆ If misuse in any way occurs, because parts or components may have been damaged.
- ◆ Use any charger except the original battery charger.
- ◆ Used with a damaged or modified battery charger. Any battery manufactured by non-Mode China.
- ◆ Only original spare parts or materials recommended by Mode China can be used. Other battery chargers may damage the battery, produce poisonous gas and even cause explosion in the worst case. Smart Spider Power Ascender and the auxiliary equipment must be inspected before and after each use, and at least once a year (different national regulations may require more frequent inspections).

03 绳索护理

Rope Care

A 绳索建议

Rope advice

绳索建议具体取决于应用类型。对于设备升降操作，牧德科技指定使用其设备升降绳，这是根据机械指令唯一明确批准与小蜘蛛升降器一同用于此用途的绳索。

人员升降应采用EN1891A绳索进行绳索应当具备坚固的结构，直径11mm以达到最佳起重性能过于柔软的绳索再高负载下容易变形或拉长，会导致小蜘蛛的防滑性能降低，最终发生打滑。在极少数情况下，这会导致绳索卡在或夹在绳轮上。

建议只在小蜘蛛升降器上使用预浸过的绳索，新绳索应在冷水（<40°C）中放置 24 小时。这样会让绳索更加适用于小蜘蛛升降器，原因有两点：

① 绳索密度

预浸可以让绳索更加致密。纤维会吸收水分，在干燥时容易发生收缩。其结果是所有纤维排布都会更密，绳皮紧密包裹住绳芯，让绳索更加坚固，从而减少绳皮打滑现象。

② 油分溶出

为了生产过程更加顺畅，会向绳索加入一些油，以降低绳索纤维合编织机之间的摩擦。如果将绳索浸入水中，表面上的一些油分会溶出。这有助于提高防滑性能。请勿用温水浸泡绳索，因为这样会导致油分大量溶出，对绳索纤维有不利影响。

Rope recommendations depend on the type of application. For the lifting operation, Mode China designates to use the static rope, which is the only rope explicitly approved for this purpose together with Smart Spider Power Ascender according to Machinery Directive.

Personnel lifts shall be carried out with EN1891A rope. The rope shall be of robust construction, 11 mm diameter to achieve optimum lifting performance. A too soft rope is liable to deform or elongate under high load, which will reduce the skid resistance of the little spider and eventually cause slipping. In very few cases, this can cause the rope to seize or grip on the sheave.

It is recommended to use the pre-soaked rope only on Smart Spider Power Ascender, and the new rope should be placed in cold water (< 40°C) for 24 hours. This will make the rope more suitable for Smart Spider Power Ascender for two reasons:

① Rope density

Pre-soaking can make the rope denser. Fibers absorb moisture and easily shrink when they are dry. As a result, all the fibers are arranged more densely, and the rope skin tightly wraps the rope core, making the rope stronger, thus reducing the slippage of the rope skin.

② Oil dissolution

In order to make the production process smoother, some oil will be added to the rope to reduce the friction between the rope knitting machines. If the rope is immersed in water, some oil on the surface will dissolve out. This helps to improve the anti-skid performance. Please do not soak the rope with warm water, because this will cause a large amount of oil to dissolve out, which will adversely affect the rope fiber.

B

绳索检查-报废标准

Rope inspection(Rope replacing standard)

● 损坏

- ◇ 绳索不得暴露在过高温度下。检查有无火焰或火花引起损坏（明显的熔化斑点）或者摩擦热导致的逐渐熔化（硬化或者熔化的内芯纤维）。
- ◇ 绳索的绳皮纤维不能有影响绳皮性能的切口或损坏绳索不允许有任何变形，厚度和密度应当恒定。
- ◇ 不允许沾染油污、溶剂、酸、碱或其他任何腐蚀性化学物质。

● Damage

- ◇ Ropes must not be exposed to excessive temperature. Check whether there is damage caused by flame or spark (obvious melting spots) or gradual melting caused by friction heat (hardened or melted core fiber).
- ◇ The rope skin fiber of the rope can not have any notch or damage that affects the performance of the rope skin.The rope is not allowed to have any deformation, and the thickness and density should be constant.
- ◇ Do not be contaminated with oil, solvent, acid, alkali or any other corrosive chemicals.

C

一般安全措施

General safety measures

- ① 仔细规划和评估您的工作，应制定一份救援计划
- ② 只有经过培训的合格操作员才能操作小蜘蛛升降器及其附属设备
- ③ 适当的工作监督计划
- ④ 工作开始前进行安全交底
- ⑤ 根据预先制定的工作说明（升降计划、执行计划）操作设备
- ⑥ 仅可使用经过认证和检查的设备
- ⑦ 必须按照本地法规进行设备检查，小蜘蛛每年应检查一次
- ⑧ 根据所提供的检查指南进行使用前检查

- ① Carefully plan and evaluate your work, and make a rescue plan.
- ② Only trained and qualified operators can operate Smart Spider Power Ascender and its auxiliary equipment.
- ③ Appropriate work supervision plan.
- ④ Conduct safety disclosure before starting work.
- ⑤ Operate the equipment according to the pre-established work instructions (lifting plan and execution plan).
- ⑥ Only certified and inspected equipment can be used.
- ⑦ Equipment inspection must be carried out according to local laws and regulations and the Smart Spider Power Ascender should be inspected once a year.
- ⑧ Conduct pre-use inspection according to the inspection guide provided.

D / 基本操作指导原则

Basic operational guidelines

- ◆ 用户应以可用的最低速度将负载升离地面，直到绳索完全拉直。
 - ◆ 禁止将负载提升到额定能力以上。
 - ◆ 请勿尝试提升固定或受阻负载。
 - ◆ 请勿侧向拉动负载。
 - ◆ 应避免过度微动（例如：向电机施加短脉冲）
-
- ◆ The user should lift the load off the ground at the lowest speed available until the rope is completely straightened.
 - ◆ Do not lift the load above the rated load capacity.
 - ◆ Do not attempt to lift fixed or blocked loads.
 - ◆ Do not pull the load sideways.
 - ◆ Avoid excessive fretting (e.g. applying short pulses to the motor).

04 升降系统 Lifting system

- ◆ 小蜘蛛升降器经过 CE 认证，设计用于升降人员和设备
- ◆ 其安全工作负载为 200kg，最大起重能力为 250kg
- ◆ 不允许侧拉负载
- ◆ 避免过度微动(例如向电机发出短脉冲)
- ◆ 禁止载人

- ◆ Smart Spider Power Ascender has been certified by CE, and is designed for lifting people and equipment.
- ◆ Its safe working load is 200 kg and its maximum lifting load capacity is 250 kg.
- ◆ Do not side-pull loads.
- ◆ Excessive inching (e.g. giving short pulses to the motor) shall be avoided.
- ◆ Prohibited to carry people.

小蜘蛛升降器经过CE认证，Smart spider pro参数：额定载重：200KG,电压：36V，防护等级IP54，适用环境温度：-20°C-50°C，
Smart spider max参数：额定载重：200KG,电压：36V，防护等级IP65，适用环境温度：-20°C-50°C

Smart spider after CE certification. Smart Spider Pro parameters: rated load: 200KG, voltage: 36V, protection level IP54, applicable ambient temperature: -20 ° C-50 ° C, Smart Spider Max parameters: rated load: 200KG, voltage: 36V, protection level IP65, applicable ambient temperature: -20 ° C-50 ° C

A / 基本要求

Basic requirements

- ◆ 仅可使用经过认证和检查的设备
- ◆ 经过培训的合格操作员
- ◆ 现场监督
- ◆ 用绳索悬吊时务必使用止坠系统
- ◆ Only certified and inspected equipment can be used.
- ◆ Trained and qualified operators.
- ◆ Field supervision.
- ◆ Be sure to use the fall arrest system when use Smart Spider Power Ascender to lifting personnel.

绳索系统必须包含一根主绳和一根辅助止坠绳。两根绳索都必须通过 EN1891A 认证，且直接为 10-11mm。两根绳索必须有各自单独固定点，每个固定点至少承受 12KN，应由合格人员判断单独固定点是否足够可靠。

小蜘蛛升降器会沿主绳/工作绳上升或下降。如果承载系统的任何部分断裂，负载会立即转移到辅绳，辅绳与符合 EN12841A 的坠落防护装置构成一套止坠系统

请勿沿扭曲的绳索下降，否则可能导致绳索卡住，严重的情况下会使绳子脱离绳轮

The rope system must contain a main rope and an auxiliary anti falling(safety) rope.Both ropes must be certified by EN1891A, and they are 10-11 mm directly. Two ropes must have their own independent fixing points, each of which can bear at least 12 KN.Qualified personnel should judge whether the independent fixing points are reliable enough.

Smart Spider Power Ascender will ascend or descend along the main rope/working rope.If any part of the load-bearing system breaks, the load will be immediately transferred to the auxiliary(safety) rope, and the auxiliary(safety) rope and the fall protection device according to EN12841A form a set of fall prevention system.

Please do not descend along the twisted rope, otherwise it may cause the rope to get stuck. In severe cases, the rope will be separated from the rope wheel.

B / 人员安全

Personal safety requirements

- ① 用户必须穿着同时符合EN831:2008和EN361标准的防护装备。
The user must wear protective equipment complying with EN831:2008 and EN361 standards.
- ② 不要在疲倦、生病或受到酒精、毒品或药物的影响下使用升降器。
Do not use power ascender when you are tired, sick or under the influence of alcohol, drugs or medicines.

使用前，确保完成以下事项

Before use, ensure that the following items are completed:

- ① 检查系统的所有部件。
Check all parts of the system.
- ② 使用合适的个人防护装备。
Use appropriate personal protective equipment.
- ③ 穿戴合适的衣服，上面不要有宽松的吊件。
Wear suitable clothes, and don't have loose pendant on them.
- ④ 如有必要请将长发和长须束起，保持肩部区域没有胡须或者头发。
If necessary, please tie up the long hair and beard, and keep the shoulder area free of beard or hair.

使用时，确保做到以下事项

When using, make sure to do the following

- ① 注意力集中，运用常识判断
Focus, use common sense to judge.
- ② 不要握住升降器上方靠紧绳轮部分的绳索，会有挤伤手的风险
Don't hold the rope above power ascender that is close to the rope wheel, as there is a risk of hand injury.
- ③ 手脚远离转动部件
Hands and feet away from rotating parts.
- ④ 开始上升避免钟摆式运动
Start rising to avoid pendulum motion.

05

升降系统-设备

Lifting system-equipment

- ① 小蜘蛛升降器与升降绳经过机械指令认证为安全工作负载 200kg 的设备升降系统。
Smart Spider Power Ascender and the lifting rope are certified as the equipment-lifting system with a safe working load of 200 kg by Machinery Directive.
- ② 起重操作中使用的附属设备必须符合当地起重相关法规。
Auxiliary equipment used in lifting operation must comply with local lifting regulations.

A

一般升降建议

General lifting suggestions

- ① 评估需要完成的工作，予以妥善规划。
Evaluate the work that needs to be completed, and make proper planning.
- ② 运行风险评估。
Operational risk assessment.
- ③ 制订应急计划。
Make contingency plans.
- ④ 针对需要完成的升降操作制定升降计划。
Make a lifting plan for the lifting operation to be completed.
- ⑤ 所有小蜘蛛升降器的操作员均应由牧德科技认证的合格培训师培训。
All operators of Smart Spider Power Ascender should be trained by qualified trainers certified by Mode China.

- ⑥ 所有人员应穿戴合适的防护装备。
All personnel shall wear appropriate protective equipment.
- ⑦ 只使用系统认证的部件进行设置。
Use only system certified components for setting.
- ⑧ 根据计划执行升降操作。
Perform lifting operation according to the plan.

B / 设备升降设置 Equipment-lifting setting

- ◆ 设备升降固定点：小蜘蛛升降设置使用的固定点安全工作负载最小应为 500kg，固定点的安全系数应满足本地法规，且对于结构件系数至少为4。

Equipment-lifting fixing point: the minimum safe working load of the fixing point used in the lifting setting of Smart Spider Power Ascender should be 500 kg, and the safety factor of the fixing point should meet the local regulations, and the coefficient for structural parts should be at least 4.
- ◆ 绳索必须始终由绳索操作人员集中全部注意力进行引导，避免下降时，松散绳索再卷入升降机过程中受到任何阻碍。绳索受阻可能导致其损坏。妥善安排绳索管理以避免绳索出现任何问题。

The rope must always be guided by the rope access operator with all his attention, so as to avoid any obstruction when the loose rope is involved in power ascender again when descending. Blocking the rope may cause its damage. Arrange rope management properly to avoid any problems with ropes.

06 培训 Training

- ◆ 本产品的用户必须由牧德科技或其认证经销商进行适当培训。
Users of this product must be properly trained by Mode China or its certified agents/distributors.
- ◆ 借助小蜘蛛升降器可以快捷、安全、可靠地到达高空或地底
With the help of Smart Spider Power Ascender, you can reach the high altitude or underground quickly, safely and reliably.
- ◆ 我们的升降器可以轻松实现各种工作方式，对于其他方法难以或无法到达的场所很有价值。不同地点和情况下的使用方式多种多样，因此培训是必不可少的
Our power ascender can easily realize various working application scenarios, which is very valuable for places that are difficult or inaccessible by other methods. There are many ways to use it in different places and situations, so training is essential.

在高空或是难以到达或到达受限的场所工作需要高超的技能，这只能通过密集培训和定期进修获得。
Working at high altitude or in places where access is difficult or limited requires superb skills, which can only be obtained through intensive training and regular study.

07

电池护理

Battery care

关于电池安全和处理的重要信息！

Important information about battery safety and handling!

小蜘蛛电动升降器电池再提供强劲电量的同时保持了小巧轻便的身材。该电池采用高性能锂电技术，能够提供超高的功率和能量密度。小蜘蛛升降器电池的正确使用和充电，有助于您在电池的整个使用寿命内获得高水平的性能表现。

battery provides strong power while maintaining a small and lightweight figure. The battery adopts with high-performance lithium battery technology, it can provide ultra-high power and energy density. Correct battery using and charging can help you achieve a high level of performance throughout the life of the battery.

A

一般准则和警告

General guidelines and warnings

- 不用时，请从升降器上取下电池。
When not in use power ascender, please remove the battery from the power ascender.
- 请在使用之后尽快为电池充电。
Please charge the battery as soon as possible after use.
- 充电后，请从充电器上取下电池。
Please remove the battery from the charger after charging.
- 如果电池使用不当或存在缺陷，则可能发生爆炸，从而引发火灾。小蜘蛛电动升降器及相关电池产品的所有用户都必须是可以处理紧急情况的专业人士。
If the battery is improperly used or defective, it may explode, thus causing a fire. All users of Smart Spider Power Ascender and related battery products must be professionals who can handle emergencies.
- 电池充电过程中发生严重故障可能导致电池起火爆炸。
无人看管下的电池充电必须在远离可燃和易爆材料的安全隔离区内进行，这样可以最大限度降低潜在损害。
Serious failure during charging of the battery may cause the battery to catch fire and explode. Unattended battery charging must be carried out in a safe isolation area away from combustible and explosive materials, which can minimize potential damage.
- 必须停止使用废旧电池或性能低下的电池，并更换新电池。
电动升降器在电池使用上的要求十分苛刻，这导致电池使用寿命相对较短。
It is necessary to stop using used batteries or batteries with poor performance and replace them with new ones. Power ascender has very strict requirements on battery use, which leads to relatively short battery service life.

B / 以下情况立即停用电池

Immediately stop using the battery in the following situations

- 电池的外壳、线缆或接头（包括电动升降器上的电池接头）出现可见损伤。
The outer case, cable or connector of the battery (including the battery connector on power ascender) is visibly damaged.
- 电池曾经跌落。电池可能出现无法从外部检测到的内部损伤
If the battery has dropped, there may be internal damage to the battery that cannot be detected from the outside.
- 充电之前，请将电池冷却至环境温度
Please cool the battery to ambient temperature before charging.
- 只可使用原装小蜘蛛电池充电器
Only original Smart Spider Power Ascender battery charger can be used.
- 请勿使电池发生短路。这可能导致电池起火。如果电池发生短路并与金属接触，电流传导可能造成严重伤害
Do not short-circuit the battery. This may cause the battery to catch fire. If the battery is short-circuited and comes into contact with metal, current conduction may cause serious injury.
- 请勿拆解或改造电池。电池安全保护装置，如损坏，可能导致电池发热、爆炸或起火
Do not disassemble or modify the battery. Battery safety protection device, if damaged, may cause the battery to heat up, explode or catch fire.
- 如果电池在使用、充电或存放过程中发出异常气味、发烫、变形或出现任何其他异常状况，请立即停止使用。由于可能发生延迟化学反应，作为安全预防措施，最好观察电池至少 15 分钟。应在建筑物或车辆外部并远离可燃材料的安全区域内进行观察。
If the battery emits abnormal smell, burns, deforms or any other abnormal conditions during use, charging or storage, please stop using it immediately. As delayed chemical reaction may occur, it is best to observe the battery for at least 15 minutes as a safety precaution. It should be observed in a safe area outside the building or vehicle and away from combustible materials.

- 请勿使电池接触水或盐水，或将电池弄湿。
Do not touch the battery with water or salt water, or wet the battery.
- 请勿过度充电。下降时使用满电量电池可能导致过度充电。下降时应使用未充满电的电池。
Do not overcharge. Using a fully charged battery during descent may lead to overcharge. When descending, use the battery that is not fully charged.

C / 存储和运输

Storage and transportation

- 所有锂电池都会随时间的推移逐渐老化，即使妥善存放也无法避免。
All lithium batteries will gradually age over time, even if properly stored. Please fully charge the battery and store it.
- 请将电池充满电后存放。
Storing a battery with empty or low charge will make the battery run out and cause irreversible damage to the battery.
- 存放电量为空或电量低的电池会使电量耗尽，对电池造成不可逆转的损伤。
If you do not use the battery and want to store it for a long time, please charge the battery every 3 months.
- 如果要存放较长时间，请每三个月为电池充一次电。
Please store the battery at room temperature of 5-25°C. Storage at high temperature will affect battery performance and shorten battery life.

- 请在 5-25 摄氏度的室温下存放电池，再高温下存放将影响电池性能，并缩短电池寿命。
Storage at high temperature will cause irreversible damage to the battery.
- 高温下存放会对电池造成不可逆损伤。在高于 60 摄氏度的环境下长期存放电池可能损坏电池并导致起火。
Long-term storage in an environment above 60°C.The battery may damage the battery and cause fire.
- 电池为受到全面管制的“危险品”，必须按照相关规定进行处理和运输。
Batteries are fully controlled "dangerous goods" and must be handled and transported according to relevant regulations.
- 严禁运输有缺陷的电池。
Transportation of defective batteries is strictly prohibited.

D / 电池处置 Battery disposal

- 请勿焚烧或弃置电池。请按照相关法规，将废旧电池送至距您最近的回收中心。
Do not burn or discard batteries. Please send the used batteries to the nearest recycling center according to relevant laws and regulations.

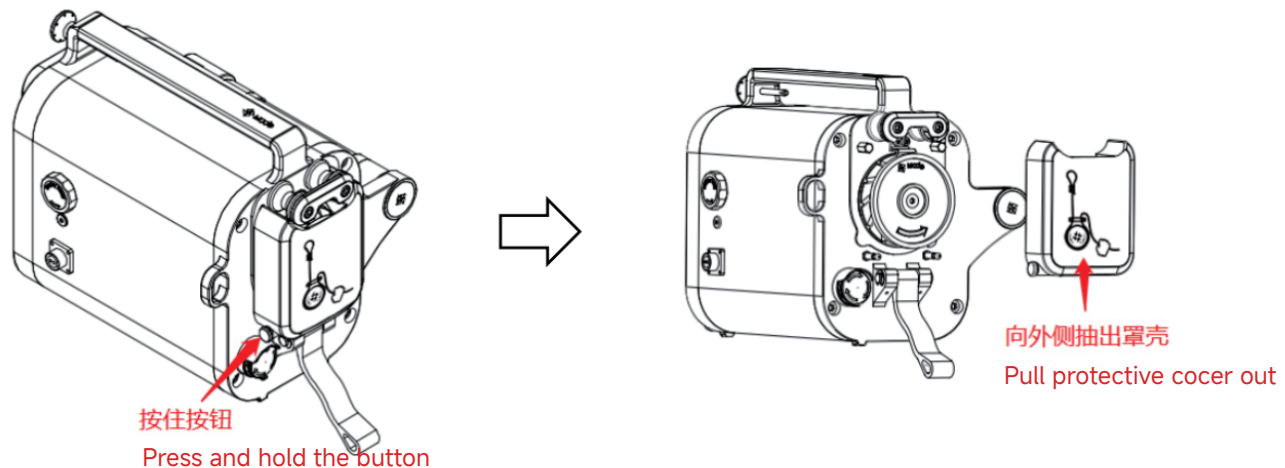
08 使用 Use the equipment

A / 使用前后检查 Check before and after use the equipment

- 在每次使用升降器之前，用户必须确保升降器完全处于正常工作状态并完成用前检查。如有疑问，请勿使用升降器，咨询牧德科技或认证经销商。
Before using Smart Spider Power Ascender every time, the user must ensure that Smart Spider Power Ascender is completely in normal working condition and complete the pre-use inspection. If in doubt, please do not use Smart Spider Power Ascender, and consult Mode China or a certified agent or distributor.
- 检查升降器及其部件有无零件松动、过度磨损和损坏。损坏包含裂缝、痕迹和异常磨损。
Check Smart Spider Power Ascender and its components for looseness, excessive wear and damage. Damage includes cracks, marks and abnormal wear.

B / 连接到绳索 Connect to the rope

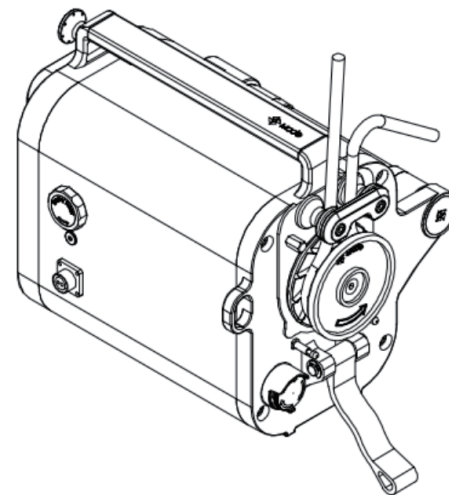
1. 打开绳索保护罩 Open the rope protective cover



2. 将绳圈穿过导绳环，绕在导线轮上

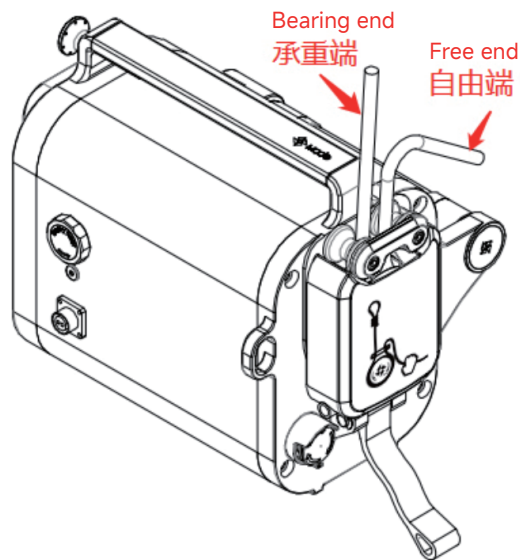
Pass the rope through the rope guide loop and wind it around the rope-guided wheel.

Important Note: The rope installing direction is Left side in and right side out.



3. 关上绳索保护罩

Close the rope protective cover.



C

上升和下降

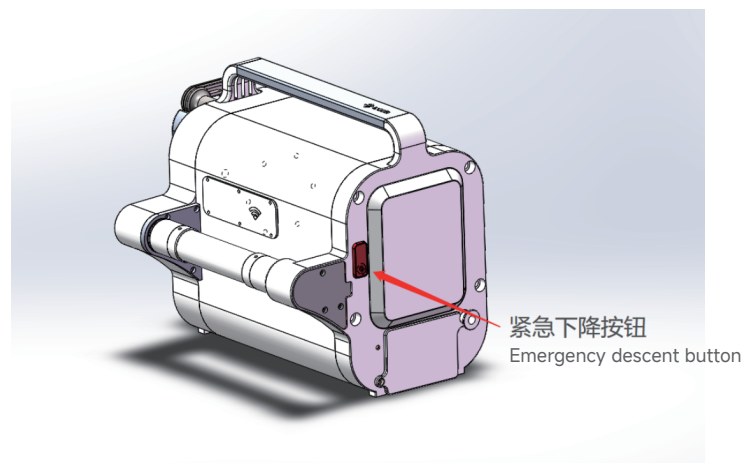
Ascending and descending

- 1 开启升降器**
 Turn on Smart Spider Power Ascender
- 2 选择行进方向向上还是向下**
 Choose the travel direction is up or down.
- 3 朝内转动速度控制手柄以提高速度**
 Turn the speed control handle inward to increase the speed.
- 4 再上升开始的几米，轻轻移开死绳。在 5 米左右之后，绳索自身重量已经足以使其远离升降器**
 Go up the first few meters, and gently remove the rope free end(shown as figure A above). After about 5 meters, the weight of the rope itself is enough to keep it away from Smart Spider Power Ascender .
- 5 朝外转动或者松开手柄，以停止运动。**
 Turn outwards or release the handle to stop the movement.
- 6 务必确保绳索顺利滑动。上升期间应确保转出的绳索不受任何阻碍。下降期间应确保经过导绳环的绳索没有发生扭曲**
 Make sure that the rope slides smoothly. During the ascending period, it is necessary to ensure that the rope is free from any obstruction. During the descent, ensure that the rope passing through the rope guide part is not twisted.

D / 紧急下降 Emergency descent

每当升降器停止运行，机械制动器就会启动。通过手动控制这个制动器，可以实现紧急下降。只在紧急情况下使用，应尽可能的使用正常下降方式。在正常下降期间电池也会充电，因此使用紧急下降不会节省电池电量。

Whenever Smart Spider Power Ascender stops running, the mechanical brake will activate. By manually controlling this brake, emergency descent can be achieved. Use the emergency descent button only in emergency situations, and use normal descending mode as much as possible. During normal descent, the battery will also be charged, so using emergency descent will not save battery power.



E / 急停按钮 Emergency stop button

- 1 按下急停按钮可以立即关闭升降器。

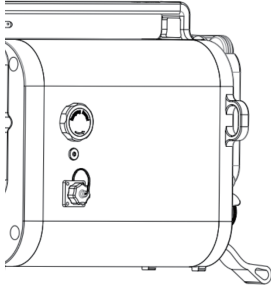
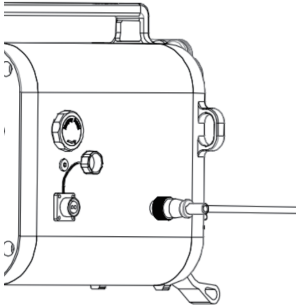
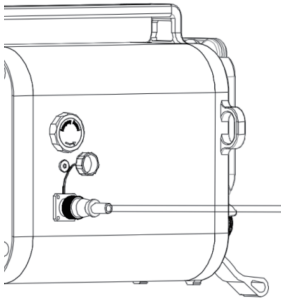
Press the emergency stop button can close Smart Spider Power Ascender immediately.

- 2 顺时针转动急停按钮弹出即可复位。

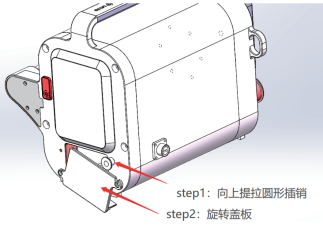
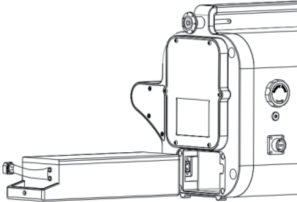
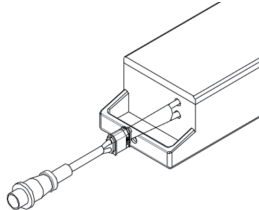
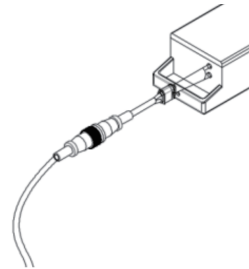
Turn the emergency stop button clockwise twice to reset.

F / 电池充电 Battery Charging

1. 电池内置充电 Battery built-in charging

		
逆时针拧开防尘盖 Uncrew the dust cover counter clockwise	拿出充电器 Take out charger	将充电器插头插入并旋紧螺母 另一侧插入电源 Insert the charger plug and tighten the nut, with the other side plugged into the power supply

2. 电池外置充电 Battery external charging

			
Step1: 向上提拉插销 Step2: 旋转盖板 Step1: Pull the latch upward Step2: Rotate the cover	拔掉电池插头，取出电池 Unplug the battery and take out the battery.	将电池转换线一侧与电池插头连接 Connect one side of the battery conversion cable to the battery plug.	将充电转换线的另一侧与充电器插头连接并拧紧螺母，充电器另一侧与电源连接 Connect the other side of the charging conversion cable to the charger plug and tighten the screw, and connect the other side of the charger to the power supply.

G / 绳索扭曲和旋转

Rope twist and rotation

- ① 由于操作员在上升/下降期间转动/旋转等原因而导致的绳索严重扭曲可能引起危险，应当避免。万一绳索卡在升降器上，应立即停止升降操作，找出原因。
Severe twisting of the rope caused by the operator's rotation/twist during ascending/descending may cause danger and should be avoided. In case the rope gets stuck on power ascender, stop the operation immediately and find out the reason.
- ② 升降人员时，应将止坠设备固定在安全位置。如果有可能，尝试小心的向相反方向操作升降器。如果无法这样做，应系紧松散绳索以固定负载，并尝试设置新的绳索系统。
When lifting personnel, the anti-falling equipment should be fixed in a safe position. If possible, try to carefully operate power ascender in the opposite direction. If this is not possible, loose ropes shall be fastened to secure the load , and try to set up a new rope system.
- ③ 如果承载绳索阻塞，请勿将手靠近升降器的承载零件。
If the load-bearing rope is blocked, please do not put your hand near the load-bearing parts of power ascender.

09 APP 操作说明 APP WIFI operating instructions

A / APP 的安装

Installation of APP on Android cellphone

- ① 在各个对应的手机应用商店可以直接下载安装 app（正在上架申请，后续补充详细在下方法）
The APP is currently not available in the application stores of various systems. Please log in to the designated website of Mode China to download.
- ② 通过公司官网（mode.top）下载 APP。
Download the APP from the company's official website (mode.top).

B / APP 操作说明

APP operating instructions

① 启动 APP (Start APP)

安装完成后，桌面会出现公司 logo 的 APP 图标，选择图标即可启动 APP；
After the installation is completed, the APP icon of company logo. Will appear on the desktop. Select the icon to start the APP.

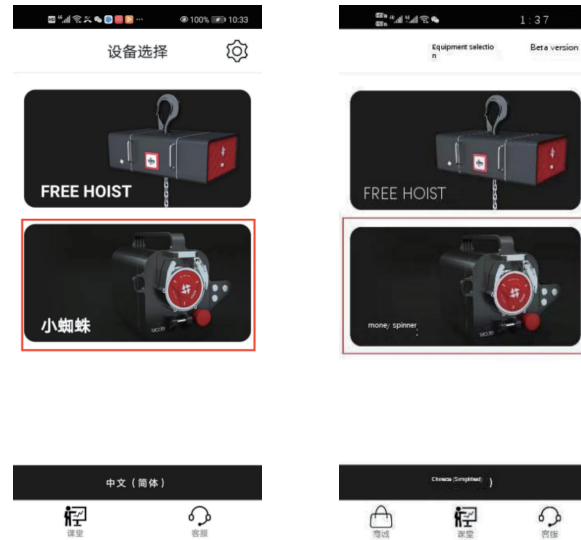
注：启动 APP 时，手机需连接外网。
Note :when starting the app ,your mobile phone needs to be connected to the external network.



APP 主界面操作 (Main interface operation of APP)

◆ 产品选择列表

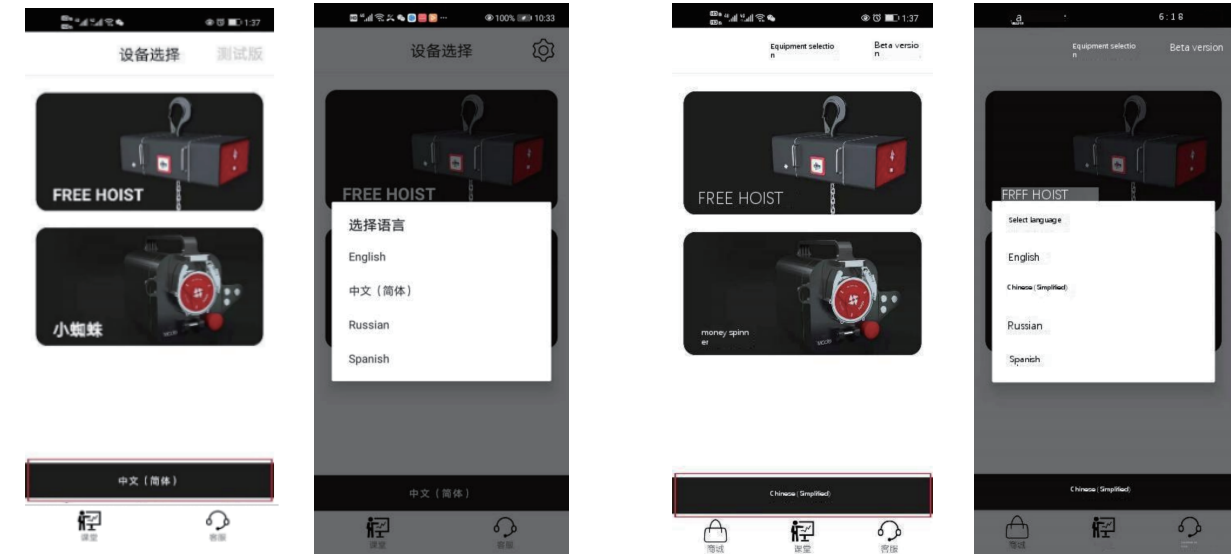
Product selection list



选择小蜘蛛 (SmartSpider) 图标 (红色框) 进入小蜘蛛控制界面;
Select smart spider icon to enter into smart spider control interface;

◆ 语言选择列表

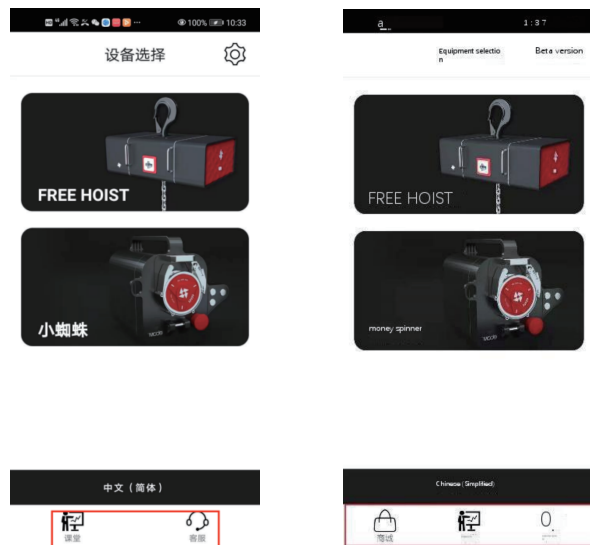
language selection list



选择主界面中的语言条 (主图红色框), APP 提供 4 种语言供客户选择;
Select the language bar the main interface, and the app provides 4 languages for customers to choose from ;

◆ 其他功能列表

Other functions list



客服：可直接启动手机邮件功能发送保修、咨询等相关邮件到公司客服中心邮箱中，客服会及时处理相关邮件。

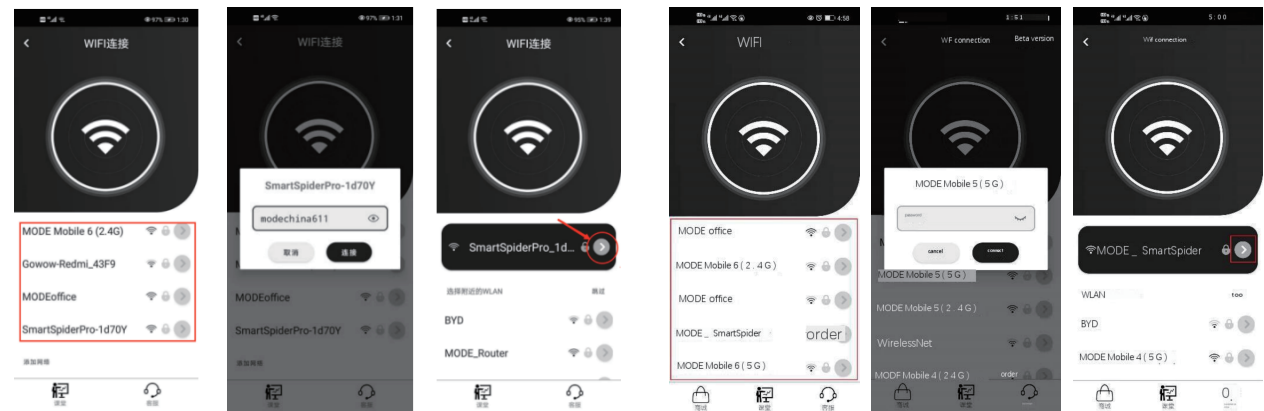
- Mobile Store Mall: Connect directly to Mode company's cloud store through the mall on the APP to buy goods and get real-time sales discount information (this function is under construction.)

- Classroom: The company will share customer cases and related safety knowledge through the cloud classroom for mutual learning among customers (this function is under construction.)

- Customer service: You can directly use the mobile phone email function to send warranty, consultation, and other related emails to the mailbox of the company's customer service center, and the customer service will handle the related emails in time.

◆ 产品无线连接

Product WIFI connection

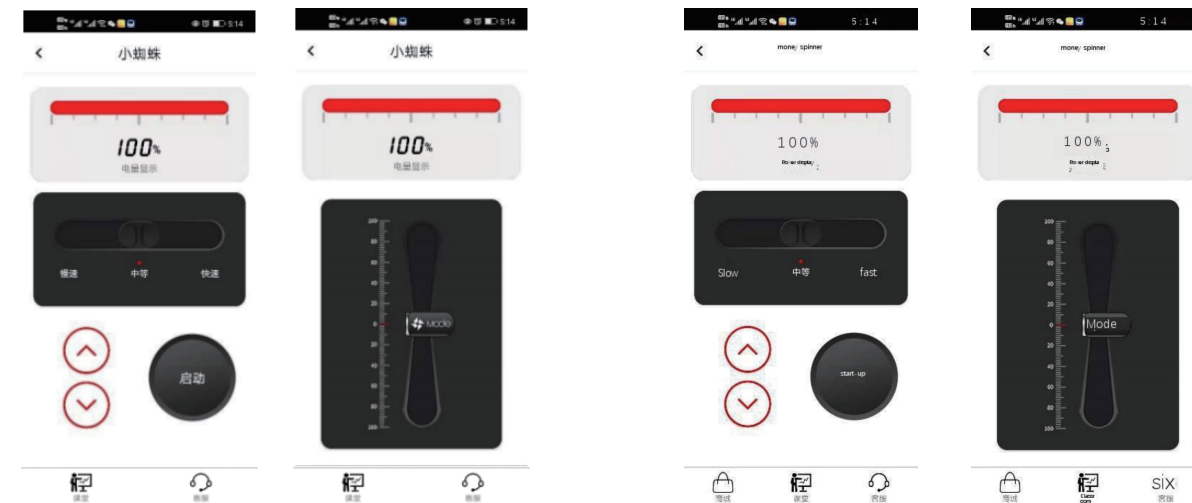


- 在产品列表中选择小蜘蛛后进入无线连接界面；
- 在无线连接界面中通过上下滑动界面（红框区域），找到小蜘蛛无线源（SmartSpiderPro1d70Y），点击右侧灰色箭头；
- 第一次连接需要输入小蜘蛛无线连接密码连接上小蜘蛛（初始密码：modechina611），以后连接手机已经记录密码，直接确认即可连接；
- 连接完成后，小蜘蛛信号源会在页面顶部呈黑色底色；
- 再次选择右侧灰色箭头（红色框），进入小蜘蛛控制界面；

- Select smart spider in the product list and enter the wireless WIFI connection interface;
- In the wireless connection interface, slide the interface up and down (red box area) to find the wireless connection of the little spider (MODE_SmartSpider), and click the gray arrow on the right;
- For the first time connection, you need to enter the wireless connection password of smart spider to connect to smart spider equipment. After that, you can connect the equipment by directly confirming that, since the password has been remembered in the mobile phone.
- After the connection is completed, background at the top of the page;
- Select the gray arrow (red box) on control interface of smart spider;

◆ 无线控制 Wireless WIFI control

1.控制方式选择 Selection of control mode



- 小蜘蛛控制界面分为两个：手动控制及滑动控制；
- 进入控制界面默认为手动控制界面（上图第一个界面）
- 进入控制界面后通过左右滑动可以切换两种控制界面

- The control interface of smart spider is divided into two parts: manual control and sliding control;
- The access control interface defaults to the manual control interface (the first interface in the above figure).
- After entering the control interface, you can switch between the two control interfaces by sliding left and right;

2.手动控制 Manual control



手动控制界面分为四个区域:

- 区域 1: 电池余量显示, 分为 10 挡 (100%、90%---10%、0%), 当电池余量低于 30% 时界面中会提示客户请及时充电;
- 区域 2: 小蜘蛛速度选择, 分为慢速、中等、快速三种速度; 默认为中等速度;
- 区域 3: 小蜘蛛运行方向选择, 分为上、下;
- 区域 4: 小蜘蛛运动启动按钮, 当小蜘蛛速度与方向选中之后, 运行启动按钮才能正常使用;

使用方式: 通过持续按压来让小蜘蛛持续运行, 放开启动按钮小蜘蛛停止运行。

The manual control interface is divided into four areas;

- Area 1: The display of battery remaining capacity is divided into 5 levels (100%, 75%, 50%, 25% and 0%). When the battery remaining capacity is less than 25%, the interface will prompt the customer to charge the battery in time.
- Area 2: the selection of Smart Spider Power Ascender speed, which can be divided into: slow, medium and fast speeds; The default is medium speed;
- Area 3: Selection of the running direction of Smart Spider Power Ascender, which is divided into up and down;
- Area 4: The START button of Smart Spider Power Ascender movement. The START button can be used normally only when the speed and direction of Smart Spider Power Ascender are selected.

Usage method: Keep Smart Spider Power Ascender running by keep pressing the START button, and release the START button to stop Smart Spider Power Ascender running.

3.滑动控制 Sliding control



滑动控制界面分为两个区域；

- 区域 1：电池余量显示，分为 10 挡（100%、90%---10%、0%），当电池余量低于30%时界面中会提示客户请及时充电；
- 区域 2：控制区域，通过按住档把图标向上或向下推动来控制小蜘蛛向上或向下运行；速度通过推行距离，分为三档，推行距离越长，速度越大。

The sliding interface is divided into two areas;

- Area 1: The display of battery remaining capacity is divided into 5 gears (100%, 75%, 50%, 25% and 0%). When the battery remaining capacity is less than 25%, the interface will prompt the customer to charge in time.
- Area 2: Control area, which controls Smart Spider Power Ascender to running up or down by pressing the bar to push the icon up or down; The speed is divided into 3 levels through pushing distance. The longer the pushing distance, the faster the speed.

10

维修和保养

Repair and Maintenance

- 仅可使用牧德科技建议的原装备件和物料;
Only original spare parts and materials recommended by Mode China can be used.
- 定期清洁设备。检查充电引脚和金属环是否氧化;
Clean the equipment regularly. Check whether the charging pin and metal ring are oxidized.
- 请勿使用流动的水或者高压清;
Do not use running water or high pressure cleaning.
- 不建议载人
Not recommended for carrying people.

每次使用前的必要例行检查 Necessary routine inspection before each use			
序号 No.	检查项目 Inspection item	检查方法 Inspection method	问题处理方法 Problem handling method
1	外观是否有破损，裂纹，缺失零件现象 Whether the appearance is damaged , cracked or missing parts?	目测 Estimate range by eye	停止使用，返厂或 MODE认可的维修机构 Stop using, return to MODE factory or MODE authorized distributor or Mode approved maintenance service center.
2	倒绳轮运转情况平顺 The rope wheel runs smoothly?	用手转动 Rotate by hand	清除到绳轮缝隙有异物 Remove any foreign matter from the gap of the rope wheel.
3	安全挂绳是否有破损 Is the safety lanyard damaged?	目测 Estimate range by eye	更换 Replace it immediately
4	承重销是否牢固 Whether the bearing bin is firm?	用手推动 Push by hand	旋紧定位螺钉 Tighten the set screw

5	急停按钮动作 Emergency stop button action.	复位动作测试 Reset action test	检查是否有异物卡滞 Check whether there is any foreign matter stuck
6	调速器手柄运转是否正常 Is the speed controlling handle running normally?	旋转动作测试 Rotation action test	检查是否有异物卡滞 Check whether there is any foreign matter stuck
7	电池电量是否充足 Is the battery fully charged?	观察电量显示窗口 Observe the power	充电 Charging if needed

定期保养 Regular maintenance			
序号 No.	名称 Name	周期 Cycle	操作方法 Operational approach
1	安全挂绳更换 Safety lanyard replacement	每半年/ 已发生破损 Every six months replacing or replace it if damaged	1.先用2mm内六角扳手取下两颗顶丝。 1. Remove the two screws with a 2mm Allen wrench first.
			2.用e型卡簧钳拆卸e型卡簧 2. Removal of e-type circlips with e-type circlip pliers
			3.从侧面取下圆柱销 3. Remove the cylindrical pin from the side.
			4.更换新的安全挂绳后恢复原样。 4. Replace with a new Safety lanyard and reinstall them.